



**LB-400-72  
LOAD BANK**

**MANUAL CONTAINS  
OPERATING INSTRUCTIONS  
PARTS LIST  
WIRING DIAGRAMS  
SERVICE INSTRUCTIONS**

**Eagle Eye Power Solutions, LLC.  
6306 Eastwood Ct.  
Mequon, WI 53092**

## CAUTION

THIS LOAD BANK IS DESIGNED FOR THE TESTING AND SERVICING 115/200V 400HZ GROUND POWER UNITS. THESE GENERATORS HAVE THE POTENTIAL OF DELIVERING A LETHAL SHOCK. THIS LOAD BANK SHOULD BE USED ONLY BY TRAINED AND QUALIFIED PERSONNEL. THIS LOAD BANK IS DESIGNED FOR TEMPORARY USE ONLY. THE LOAD RESISTORS ARE ENERGIZED WHEN THE RATE SWITCH IS OFF, THEREFORE DO NOT INSERT ANY OBJECTS IN THE GRILL ASSEMBLY. DO NOT BLOCK THE AIR FLOW OR USE IF THE AIR FLOW IS REVERSED.

# MANUAL FOR LB-400-72 LOAD BANK

## TABLE OF CONTENTS

SUBJECT		SECTION	PAGE
DESCRIPTION			
PURPOSE OF LOAD BANK		1 - 1	4
RATING OF LOAD BANK		1 - 2	4
LOAD BANK DESCRIPTION	FIGURE 1 - 1	1 - 3	4
CONTROL PANEL LAYOUT	FIGURE 1 - 2	1	5
CONTROL DESCRIPTION		1 - 4	6
OPERATION			
SETTING UP LOAD BANK		2 - 1	7
APPLYING POWER		2 - 2	7
CHECKING INPUT		2 - 3	7
APPLYING LOAD		2 - 4	7
SHUTTING DOWN		2 - 5	7
PARTS			
PARTS INFORMATION		3	8
CONTROL PANEL PARTS LAYOUT	FIGURE 3 - 1	3	9
CONTROL PANEL PARTS LIST		3	10
INTERIOR PARTS LAYOUT	FIGURE 3 - 2	3	11
INTERIOR PARTS LIST		3	12
FAN PANEL PARTS LAYOUT	FIGURE 3 - 3	3	13
FAN PANEL PARTS LIST		3	14
SERVICING			
GENERAL SERVICING		4 - 1	14
REPLACING FAN	FIGURE 4 - 1	4 - 2	15
WIRING DIAGRAMS			
INTERIOR W IRING	FIGURE 5 - 1	5	16
FAN PANEL WIRING	FIGURE 5 - 2	5	17
SCHEMATIC DIAGRAM	FIGURE 5 - 3	5	18

## DESCRIPTION

1-1 PURPOSE OF LOAD BANK: The LB-400-72 is a portable load bank designed to be used for field servicing and testing aircraft ground power units. It can be used for checking cables after they have been replaced or repaired. The load bank can also be shipped to different locations using the carrying case.

1-2 RATING OF LOAD BANK: The LB-400-72 is rated at 72 KW full load with seven lower load steps. The other steps are 9KW, 18KW, 27KW, 36KW, 45KW, 54KW and 63KW. This gives a wide range of loads that simulates most aircraft loads. All steps are continuous.

1-3 LOAD BANK DESCRIPTION: The load bank is completely self-contained and needs no power source to operate other than the power unit. The different sides of the load bank are shown in fig. 1-1. The air enters the right side (fan side) and exits the left side.



FIGURE 1-1

LENGTH	20 IN.
WIDTH	8 IN.
HEIGHT	11 IN.
WEIGH	34 LBS.

# CONTROL PANEL LAYOUT

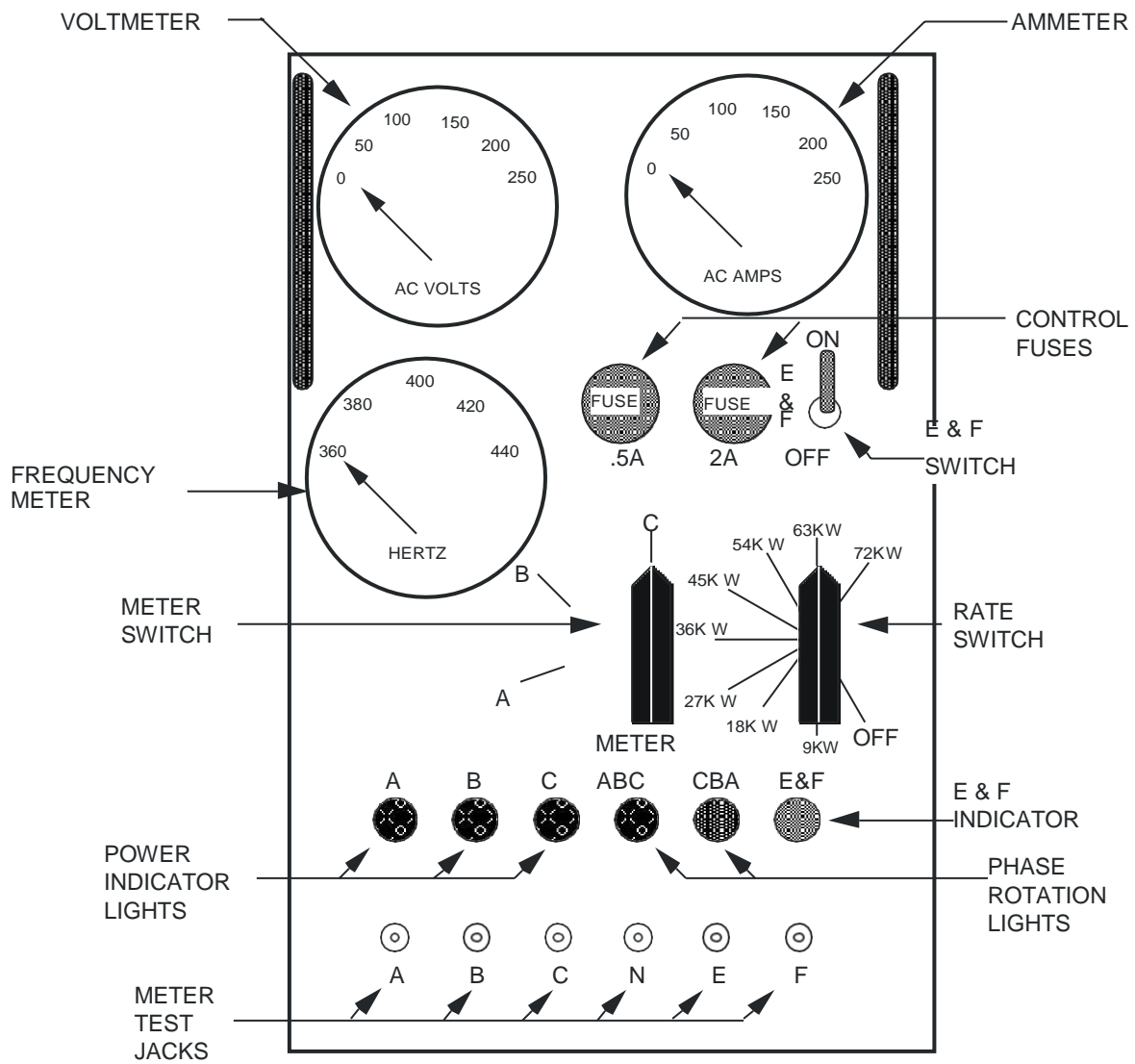


FIGURE 1 - 2

1-4 CONTROL DESCRIPTION: The following is a description of the controls on the control panel (see figure 1-2).

VOLT METER - A 250 volt meter used to measure the line to neutral voltage on the power cable. A, B, or C phase can be selected using the meter selector switch. The meter should read approximately 115 volts. A 200 volt reading would indicate a line and neutral cable switched on the power unit or cable.

AMMETER - A 250 amp ammeter used to measure the load being used by the load bank. It monitors "A" phase.

FREQUENCY METER - A 360 - 440 HZ meter used to measure the frequency of the power unit. It should read approximately 400 HZ.

CONTROL FUSE - A 2A and .5A fuse used in the control circuit and E & F interlock circuit.

E & F SWITCH - Switch is used to turn off or on the 28V power supply that powers the E & F circuit and the control circuit in the load bank.

METER SWITCH - Switch used to select A, B, or C phase on the voltmeter.

RATE SWITCH - Switch used to select the desired rate on the load bank. The rates are as follows:

1. 9 KW balanced load
2. 18 KW balanced load
3. 27 KW balanced load
4. 36 KW balanced load
5. 45 KW balanced load
6. 54 KW balanced load
7. 63 KW balanced load
8. 72 KW balanced load

POWER INDICATOR LIGHTS - These lights will light to indicate power on A, B, and C phase. All three lights should be on.

PHASE ROTATION LIGHTS - These lights indicate ABC or CBA phase rotation. The ABC light will be on when the phase rotation is correct. Do not operate if the red CBA light is on.

E & F CABLE INTERLOCK INDICATOR - The light will be on when the interlock circuit between the E & F in the cable is complete.

METER TEST JACKS - This provides a place to connect an external meter. There is a test jack for each cable pin.

POWER RECEPTACLE - The power cable from the ground power unit is plugged into the load bank through this receptacle. This is a standard aircraft receptacle.

## OPERATION

2-1 SETTING UP THE LOAD BANK - Place the load bank in an area free from fuel, oil, or any other flammable substance. The load bank should be positioned so that any strong wind or air currents will flow with the air flow of the load bank.

2-2 APPLYING POWER - The load bank should be connected to a ground power unit with an output of 115 / 200V (115V line to neutral / 200V line to line). Make sure that the power unit is off before connecting the cable to the load bank. Plug the power cable plug in to the load bank. Turn on the E & F switch and the rate switch off on the load bank. If the ground power unit has a test bank / aircraft switch, leave it in the aircraft position. Turn on the output of the ground power unit.

2-3 CHECKING THE POWER - check the following:

- A. The air flow should be as indicated by the air flow arrow.
- B. The 3 amber A, B, C lights should be on.
- C. The voltmeter should read 115V on A, B, and C phase. A 200V reading would indicate a line and neutral cable reversed.
- D. The amber ABC light should be on. A red CBA light would indicate reversed phase rotation. DO NOT operate if the phase rotation is reversed.
- E. The E & F light should be on. If the light is not on, this would indicate a loose or broken interlock cable.
- F. The frequency meter should read approximately 400HZ.
- G. The ammeter should read 0A.

2-4 APPLYING THE LOAD - If the above steps checked OK, add the load desired with the rate switch. If the power unit is wet stacked, the load will need to be added slowly allowing the carbon to clear out before going to the next step. The load will be added in 9KW steps up to 72KW.

Check to see that the voltage and frequency does not drop beyond acceptable limits under load. Return the rate switch to the off position.

2-5 SHUTTING DOWN - After turning the rate off, allow the load bank to cool down before turning the power unit off. Turn the power unit off and disconnect the power cable plug.

## PARTS INFORMATION

The following pages list the parts used in the load bank. All the major parts are shown. Wire, screws, bolts, and small miscellaneous hardware are not listed. Parts that are purchased from a vendor will show a vendor name. These names refer to the vendor list is on page 8. Parts manufactured for or by EEPS will not show a vendor name.

A part number can be found by first locating the part on a drawing. After finding the part use the number to refer to the parts list on the opposite page. Each part will have a drawing number, EEPS part number, description and the number used for each load bank.

Parts should be ordered from the address below giving the machine model number, part number and the description.

### **Contact EEPS**

#### ***Eagle Eye Power Solutions, LLC.***

6306 Eastwood Ct  
Mequon, WI, 53092

TEL: 1-877-805 EEPS (3377)

FAX: 1-414-962-3660

[eepowersolutions.com](http://eepowersolutions.com)

[info@eepowersolutions.com](mailto:info@eepowersolutions.com)



# CONTROL PANEL PARTS

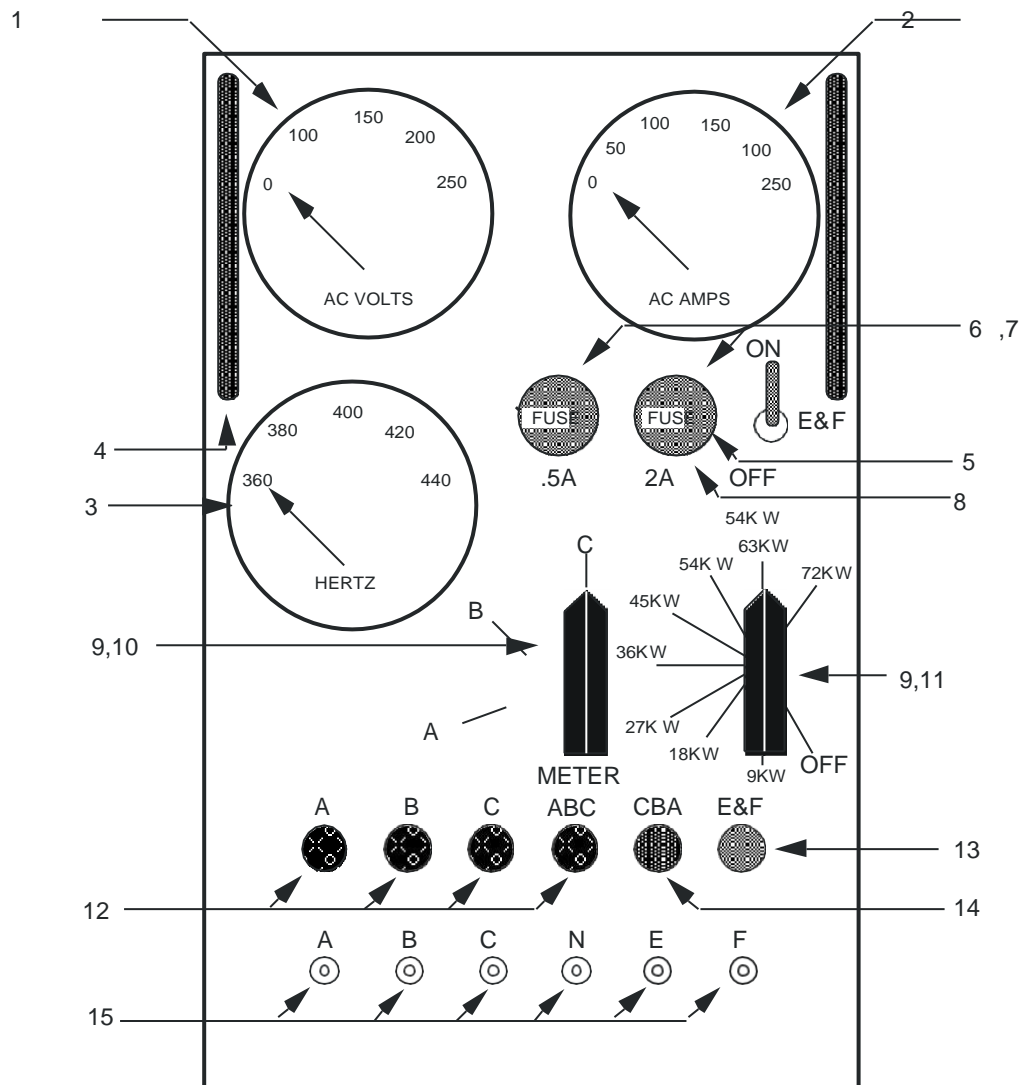


FIGURE 3 - 1

CONTROL PANEL PARTS  
FIGURE 3-1

DRAWING NUMBER	PART NUMBER	DESCRIPTION VENDOR NO.	NUMBER USED
1	MR-31	0 - 250V VOLT METER	1
2	MR-25	0 - 250 A AMMETER	1
3	MR-45	360 - 440HERTZ FREQUENCY METER	1
4	HD-25	HANDLE	2
5	SW-22	TOGGLE SWITCH DPST	1
6	FH-10	FUSE HOLDER	2
7	FS-05	.5A GLASS FUSE	1
8	FS-02	2A GLASS FUSE	1
9	KN-10	POINTER KNOB	2
10	SW-13	ROTARY SWITCH 3POSITION 1 POLE	1
11	SW-72	11 POSITION 2P ROTARY SWITCH 2 SECTION	1
12	LT-10	115V AMBER LIGHT	4
13	LT-28	28V GREEN LIGHT	1
14	LT-15	115V RED LIGHT	1
15	TP-10	METER TEST JACKS	6

# INTERIOR PARTS LAYOUT

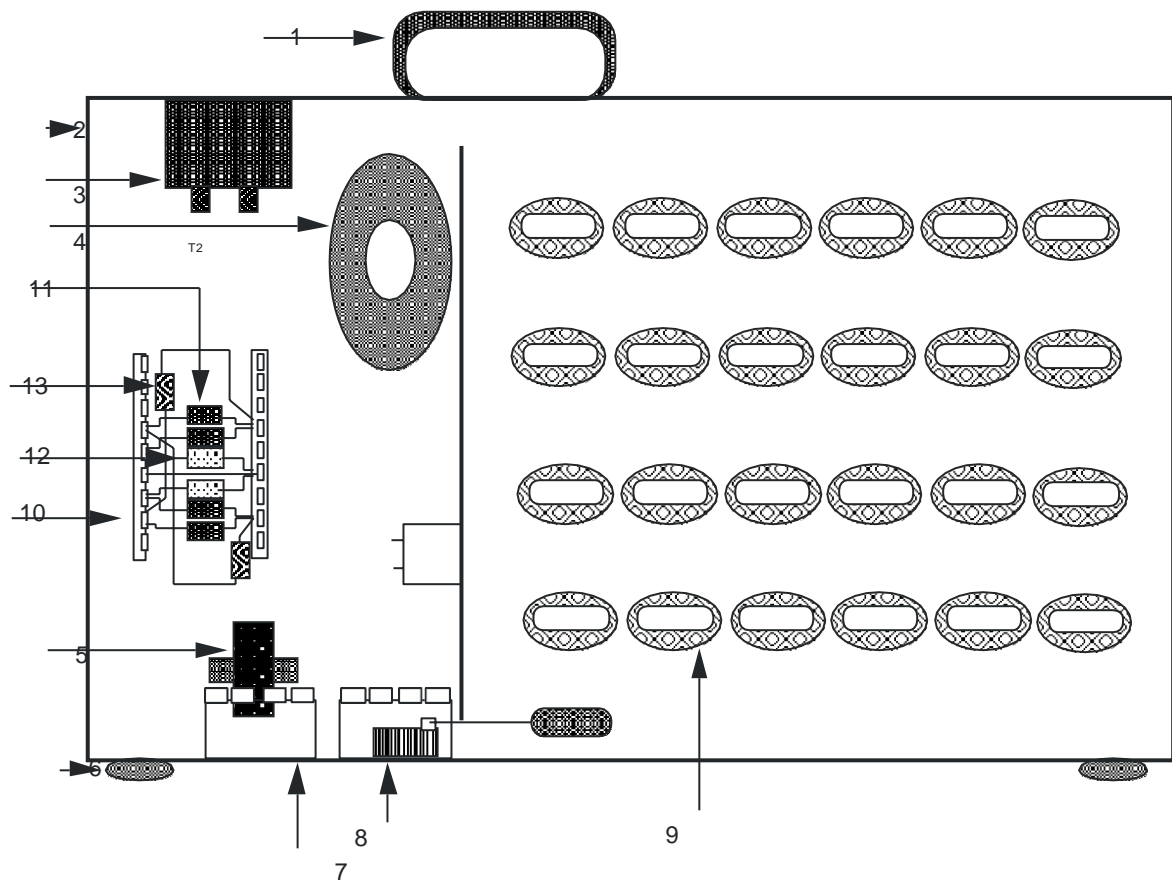


FIGURE 3 - 2

INTERIOR PARTS  
FIGURE 3-2

DRAWING NUMBER	PART NUMBER	DESCRIPTION VENDOR NO.	NUMBER USED
1	HD-10	FOLDING HANDLE	1
2	BX-40	20" X 11" X 8" ALUM BOX	1
3	RC-40	RECEPTACLE 6PIN	1
4	CT-25	250:5 CURRENT TRANSFORMER	1
5	TR-26	24V POWER SUPPLY 1.5A	1
6	FT-10	GLIDES	4
7	RY-25	RELAY 24VDC 2P 30A (FLANGE MOUNT)	8
8	SW-11	AIR FLOW SWITCH	1
9	LR-45	4.3Ω RESISTOR	24
10	TM-03	TERMINAL STRIP 3 PS	1
11	RC-25	56KΩ RESISTOR	4
12	RC-20	180KΩ RESISTOR	2
13	CP-50	.0047 MFD 600V CAPACITOR	2
*	GL-20	RESISTOR GRILL	1
*	RD-10	DIODE 1000V 1A	6

## FAN PANEL PARTS LAYOUT

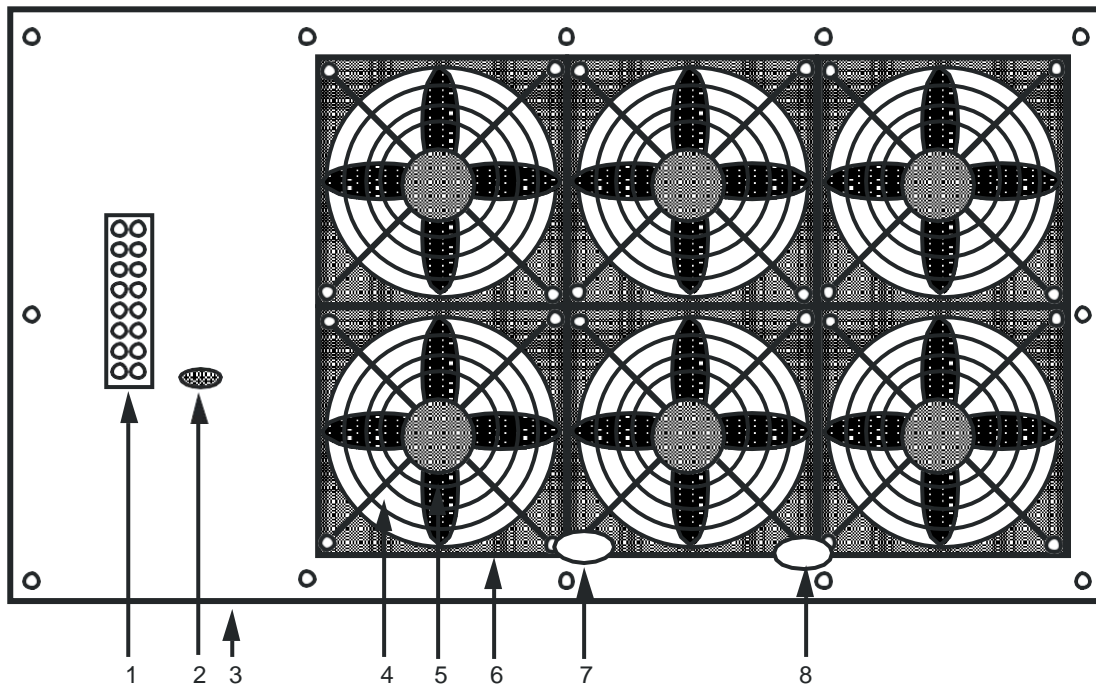


FIGURE 3 - 3

FAN PANEL PARTS  
FIGURE 3-3

DRAWING NUMBER	PART NUMBER	DESCRIPTION VENDOR NO.	NUMBER USED
1	TM-20	8 POSITION TERMINAL STRIP	1
2	SW-12	MERCURY SWITCH	1
3	FP-40	ALUM.FAN PANEL	1
4	GL-10	FAN GRILL	6
5	GP-15	GRILL W/P	6
6	FN-40	200V 400HZ 3P FAN	6
7	TS-17	THERMAL SWITCH 175° V-GEMLINE	1
8	TS-15	THERMAL SWITCH 155° V-GEMLINE	1

GENERAL SERVICE

There is no regular maintenance required on the load bank. There are no adjustments inside the load bank. It should however be checked periodically for defective fans, burned out light bulbs, and defective meters.

To remove the fan panel, remove the screws around the outer edge. The meters can be removed and replaced from the front panel.

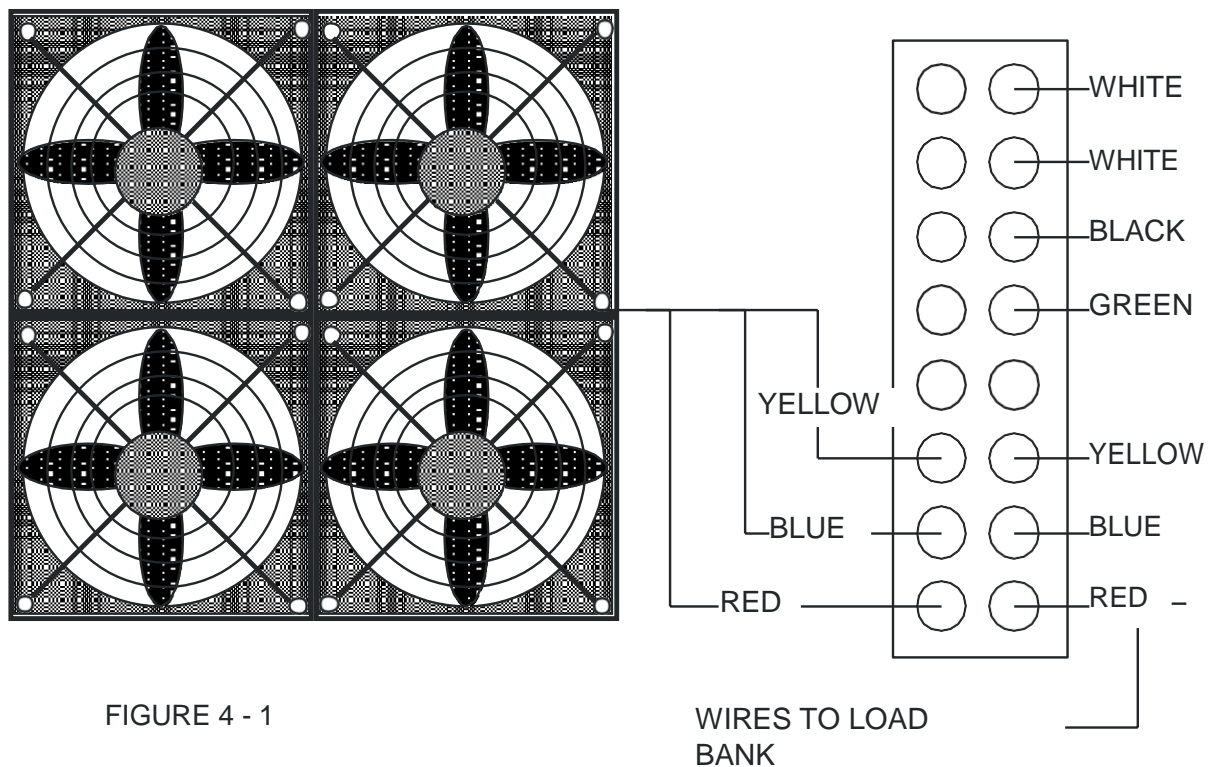
The fan grills should be kept free of any trash.

Do not place any objects in the fan or resistor grill.

## FAN REPLACEMENT

The following are steps to take to replace a defective fan.

1. Remove the screws holding the fan panel to the load bank.
2. Remove the three wires on the terminal strip that come from the load bank.
3. Drill out the rivets holding the fan (four on each side).
4. Lift up the fan and unplug it from the wire attached to the fan.
5. Plug a new fan into the same wire making sure that the fan is in the same position as the old fan.
6. Rivet the new fan back to the fan panel along with the fan grill.
7. Install the three wires back on the terminal strip. Place the fan panel back on the load bank.



## INTERIOR WIRING

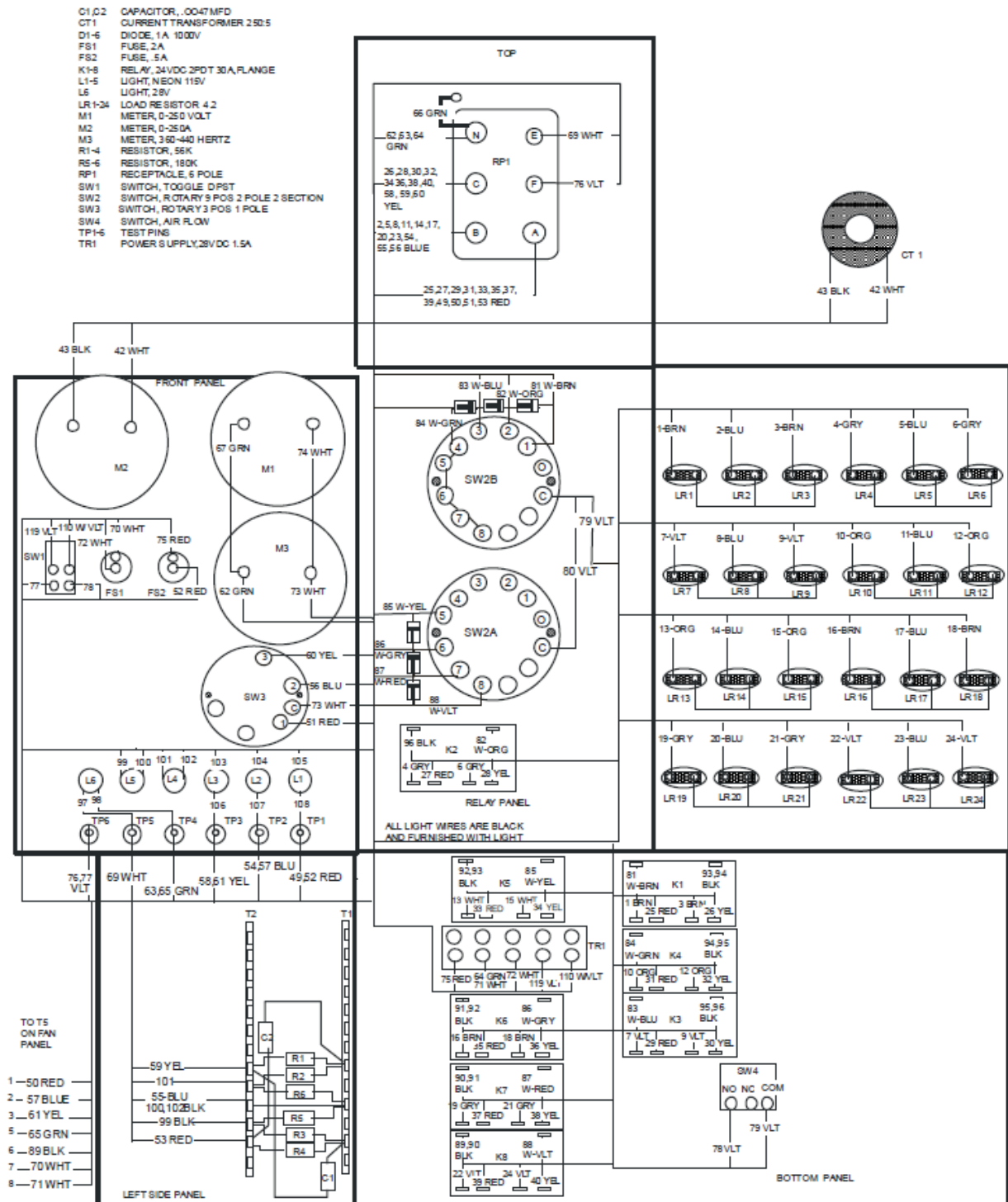


FIGURE 5-1



## FAN PANEL WIRING

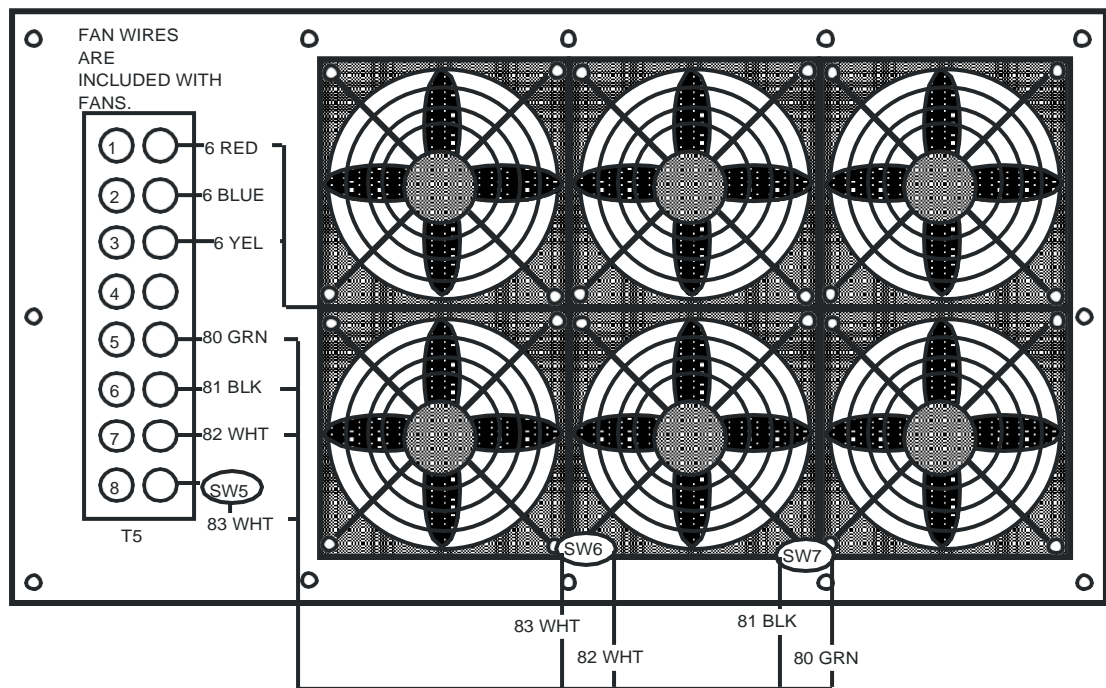


FIGURE 5-2

## LB-400-72 SCHEMATIC

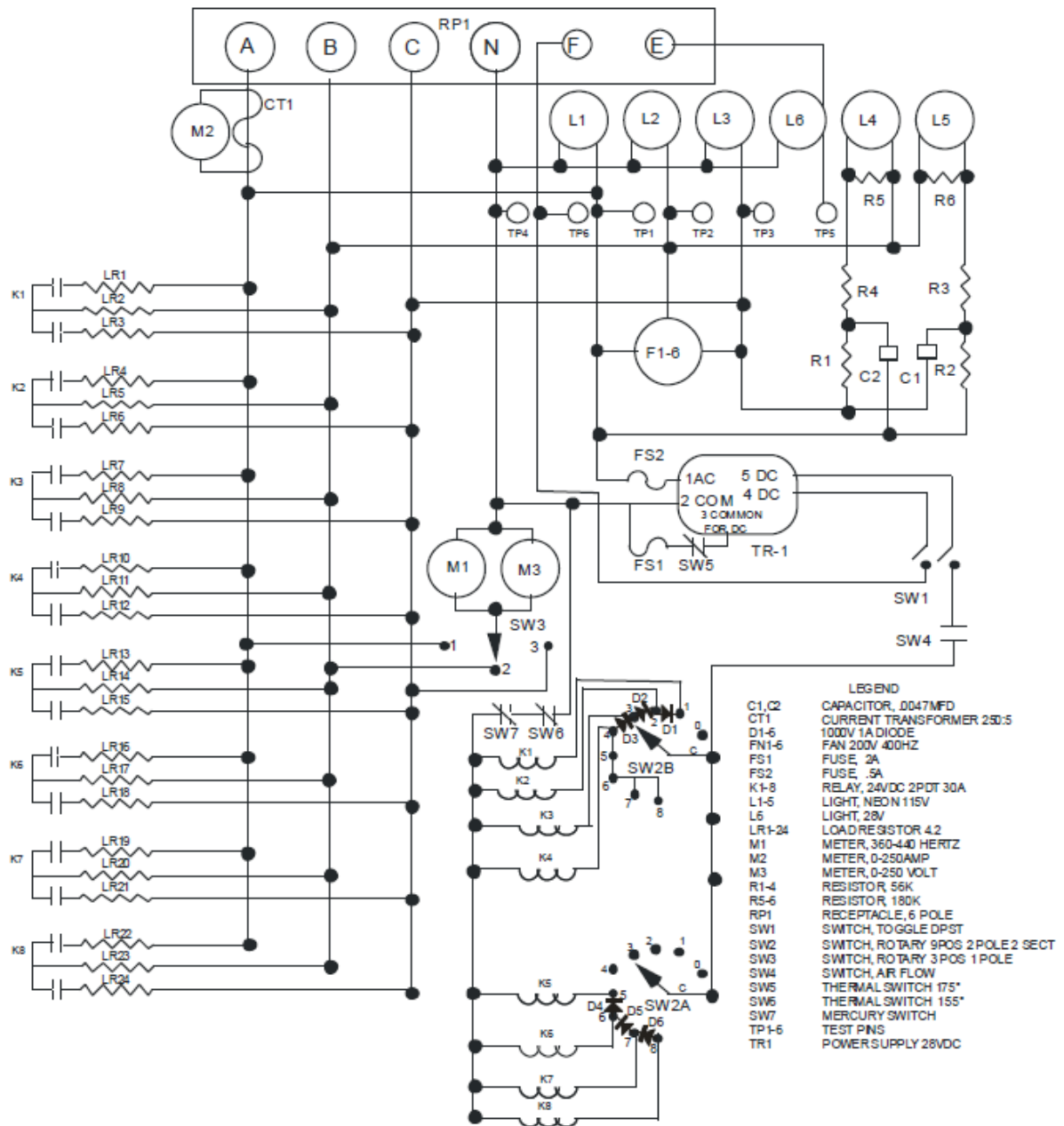


FIGURE 5-3